



AP/2186
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Brian R. Bennett et al.

Title: PREVENTION OF LIVE-LOCK IN A MULTI-PROCESSOR SYSTEM

Docket No.: 884.174US1

Serial No.: 09/470,329

Filed: December 22, 1999

Due Date: November 26, 2005 (Saturday)

Examiner: Denise Tran

Group Art Unit: 2186

MS Appeal Brief - Patents

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(GENERAL)



S/N 09/470,329

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Assignee:	Intel Corporation	Customer Number:	21186

REPLY BRIEF UNDER 37 C.F.R. § 41.41

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Appellant's Brief on Appeal

This Reply Brief is filed in response to the Examiner's Answer (hereinafter, the "Answer") mailed September 27, 2005, and supplements the Appeal Brief (hereinafter, the "Appeal Brief") filed by the Appellant on April 22, 2005. Please charge any required additional fees or credit overpayments to Deposit Account 19-0743.

Argument

The Appellant has reviewed the Answer, and believes the statements in the original Appeal Brief remain accurate and compelling. In responding to the Answer, the Appellant wishes to further clarify certain points of distinction between the pending claims and the cited references in response to newly presented comments. The corresponding pages of the Answer will be used to reference each of these points.

In addition, Appellant maintains each and every argument submitted in Appellant's pending Appeal Brief, and respectfully submits that each of the arguments are proper and valid in view of all of the statements made in the Answer. Therefore, any lack of reference in this Reply Brief to a particular argument in the pending Appeal Brief is not to be construed as an admission that the Appellant agrees with any of the statements in the Answer (Examiner's Answer). Appellant asks that the statements made in Appellant's pending Appeal Brief be considered in full, in addition to the statements included with this Reply Brief.

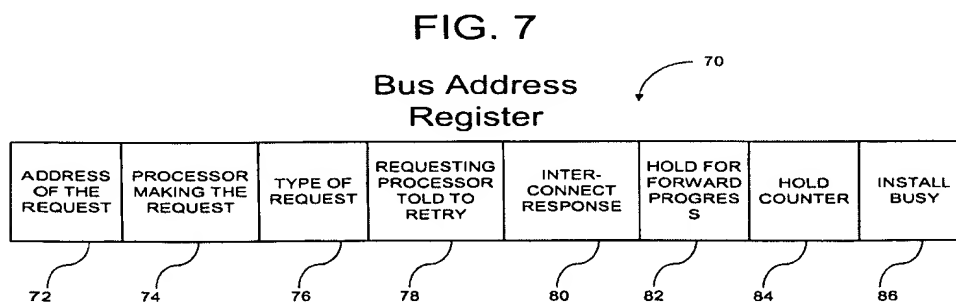
In each of the rejections of pending claims 1-21 in Appellant's present application, Appellant submits that the Office Action and the Answer attempt to take two different fields disclosed in the Gilbert et al. reference, (wherein each field is used for a different purpose in Gilbert et al.), and describe these two different fields as if they were the same flag. By doing this, the Office Action and the Answer attempt to improperly create the elements included in pending claims 1-21 that are not taught or suggested in Gilbert et al.

For example, claim 1, as currently pending and appealed recites,

setting a status bit to indicate that a bus transaction attempting to modify the shared resource is pending; and
 retrying each subsequent nonmodifying bus transaction for the shared resource until the status bit is cleared. (Emphasis added).

Thus, claim 1 includes setting a status bit to indicate that a bus transaction attempting to modify the shared resource is pending, and that retrying each subsequent nonmodifying bus transaction for the shared resource is done until that same status bit is cleared.

In an attempt to supply these elements, the Office Action and the Answer rely on two completely different fields (field 76 and field 82) in Gilbert et al., the two completely different fields in Gilbert et al. performing completely different functions. As shown below, FIG. 7 from the Gilbert et al. reference is reproduced here to show that field 76 and field 82 are two different fields, and as will be further explained below, perform completely different functions.



The Office Action and the Answer repeatedly (*e.g.* the Answer on pages 3, 4, 14, and 15-16) rely on the disclosure in Gilbert et al. relating to element 76 of Fig. 7, and the disclosure at column 9, lines 48-52, to supply the element of setting a status bit to indicate that a bus transaction attempting to modify the shared resource is pending, as recited in claim 1. The cited portion of Gilbert et al. states,

Field 76 indicates the degree of control that the processor wants over the line. For example, the processor may want to read the data line, in which case it needs no control of the line, or the processor may want to write to the line, in which case it needs total control of the line.

Appellant's representatives fail to find in, and the Office Action and the Answer fail to point out in Gilbert et al. where this field, field 76, is used to retry subsequent non-modifying bus transactions for the shared resource until the status of this field is cleared. Instead, the Office Action and the Answer (*e.g.* the Answer on pages 3, 4, 14, and 16) rely on Fig. 8C, element 110, and column 9, lines 63-35 and column 11, lines 9-20 in an attempt to supply these elements. As noted on pages 10-11 of Appellant's pending Appeal Brief, Fig. 8C, element 110, and the cited portions of Gilbert et al. at columns 9 and 11, relate to the hold flag in field 82, which is a completely different field from field 76. As further noted in Appellant's pending Appeal Brief, Gilbert et al. discloses that field 82 is set when data is received from the system interconnect. However, as also noted in Appellant's pending Appeal Brief, there is no disclosure in Gilbert et al. that the setting of field 82 is related to any indication that a bus transaction attempting to modify the shared resource is pending.

Therefore, Appellant maintains the arguments presented on page 11 of the pending Appeal Brief that the Office Action (and now the Answer) have inappropriately attempted to combine two completely separate fields disclosed in Gilbert et al. in an attempt to create a single status bit as recited in claim 1.

In the 35 U.S.C. § 103(a) rejection of claims 1-2, 4-5, and 7-8 based on the Gilbert et al. and the Arimilli et al. references, neither the Office Action nor the Answer rely on or point out in the additional reference of Arimilli et al. where these elements recited in claim 1 and missing from Gilbert et al. are taught or suggested. Both the Office Action and the Answer merely rely on the Arimilli et al. reference as disclosing a flag as a bit and for preventing live-lock. While Appellant does not necessarily agree with these statements, these statements fail to remedy the

deficiencies of the Gilbert et al. reference in reciting all of the elements included in claim 1.

Thus, neither Gilbert et al. nor Arimilli et al., either alone or in combination, teach or suggest all of the elements recited in claim 1.

The Answer on page 18 cites *In re Keller*, 642 F.2d 413 N In re Merc & Co. 800F.2d 1091 in stating, "In response to applicant's arguments against the references individually, one cannot show nonobviousness by attaching references individually where the rejections are based on combinations of references." Appellant responds that, as noted on page 9 of the pending Appeal Brief, the MPEP requires, "Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." (*M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991))). Thus, the Office Action cannot create a *prima facie* case of obviousness by combining with a first reference (Gilbert et al.) that fails to teach all the elements of a claim or claims a second reference (Arimilli et al.) that also fails to teach the elements missing from the first reference. Since Appellant believes they have shown that the proposed combination of Gilbert et al. and Arimilli et al. fails to teach or suggest all of the elements recited in claim 1, Appellant has shown that the Office Action and the Answer fail to establish a *prima facie* case of obviousness with respect to claim 1.

For reasons analogous to those stated above and on pages 10-13 of Appellant's pending Appeal Brief, neither the Office Action nor the Answer state a *prima facie* case of obviousness with respect to independent claim 7, and with respect to dependent claims 2, 4-5, and 8.

Further, and for reasons analogous to those stated above and on pages 13-19 of Appellant's pending Appeal Brief with respect to the 35 U.S.C. § 103(a) rejection of claims 3, 6, and 9, and the 35 U.S.C. § 103(a) rejection of claims 10-21, neither the Office Action nor the Answer state a *prima facie* case of obviousness in forming these rejection. In both of these rejections, Gilbert et al. is relied upon as supplying the elements in these claims which, for at least the reasons argued above and for at least the reasons stated in the Appellant's pending Appeal Brief, are missing from Gilbert et al. The Office Action and the Answer both fail to rely on, or to point out where in the additional references of Donley et al. and Vogt et al., these elements missing from Gilbert et al. and included in claims 3, 6, 9, and 10-21 are taught or suggested.

Thus, Appellant maintains the arguments presented in Appellant's pending Appeal Brief with respect to the 35 U.S.C. §103(a) rejections of claim 3, 6, 9, and 10-21.

Further, Appellant maintains the arguments presented on pages 12 and 13 with regards to the Office Action's lack of providing a proper basis, as required by *In re Sang Su Lee*, for forming the proposed combination of Gilbert et al. and Arimilli et al. The Answer alleges that the Appellant's pending Appeal Brief misquoted the Office Action by leaving out the word "and" in quoting the Office Action on pages 12-13 of the Appeal Brief. Appellant respectfully disagrees, in that the quotation taken from page 21 of the Office Action and included on pages 12-13 of the Appellant's pending Appeal Brief accurately recites the verbiage of the Office Action, including the word "and."

Further, the proposed interpretation on page 19 in the Answer, wherein the Answer appears to imply that there is no connection between the recitation related to the storage flag or minimizing the storage requirements of the system by using a bit and the statement "allow other traffic to proceed and alleviate the prospect of a live-lock," does not bolster the arguments advanced by the Office Action, but weakens these argument. If the interpretation of this language on page 21 of the Office Action is as implied in the Answer on page 19, Appellant submits that the Office Action is then merely pointing to the elements recited in Arimilli et al. and implying that by the mere presence of these elements in the Arimilli et al. reference, the required motivation to combine the references has been shown. Appellant disagrees, in that as noted on page 9 of Appellant's pending Appeal Brief,

Obviousness is tested by "what the combined teaching of the references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 878 (CCPA 1981)). But it "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hosp. Sys.*, 732 F.2d at 1577, 221 USPQ at 933. And "teachings of references can be combined *only* if there is some suggestion or incentive to do so." *Id.* (emphasis in original).

Thus, the Answer fails to meet the requirements for forming the proposed combination of Arimilli et al. and Gilbert et al. by merely pointing to elements in the Arimilli et al. reference, and fails to show how the references provide a teaching or suggestion to form the proposed combination. Therefore, Appellant maintains the arguments on pages 12-13 of the pending Appeal Brief, wherein the Office Action and now the Answer fail to provide a proper basis for

forming the proposed combination of the Arimilli et al. and Gilbert et al. references.

Appellant further maintains each of the arguments presented on pages 13-15 with regards to the 35 U.S.C. § 103(a) rejection of claims 3, 6, and 9, in view of the Gilbert et al., Arimilli et al., and Donley et al. references, and with regards to the 35 U.S.C. § 103(a) rejection of claims 10-21 in view of the Gilbert et al. and Vogt et al. references

Conclusion

It is respectfully submitted that claims 1-21 are nonobvious in light of the cited references. The Appellant therefore believes the claims are in condition for allowance, and requests the rejections proffered in the Office Action be reconsidered and reversed, so that claims 1-21 can be allowed to issue.

The Examiner is invited to telephone Appellant's attorney at (612) 349-9592 to facilitate the prosecution of this application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date Nov. 28, 2005 By Ann M. McCrackin
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Name Amy Moriarty

Signature [Signature]